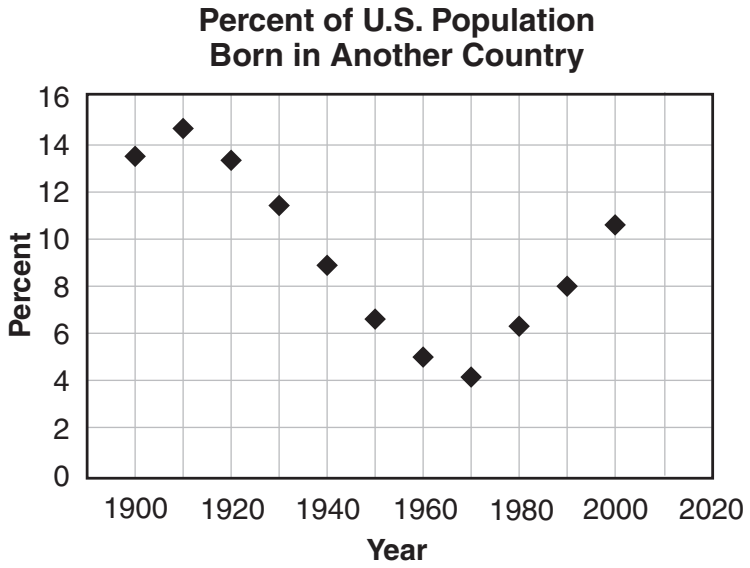
New England Common Assessment Program

Released Items
Support Materials
2005

Grade 8
Mathematics

11 The graph below shows the percent of the U.S. population born in another country.



If the trend since 1970 continues, in 2010 approximately what percent of the U.S. population will have been born in another country?

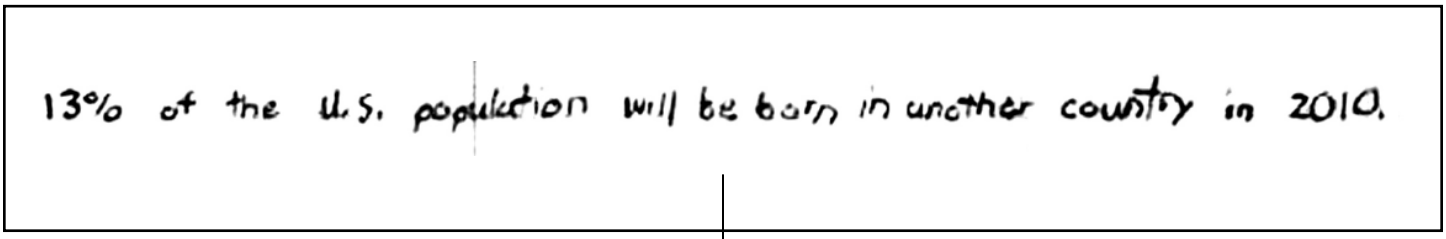
Scoring Guide:

Score	Description
1	Student gives correct answer.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Training Notes:

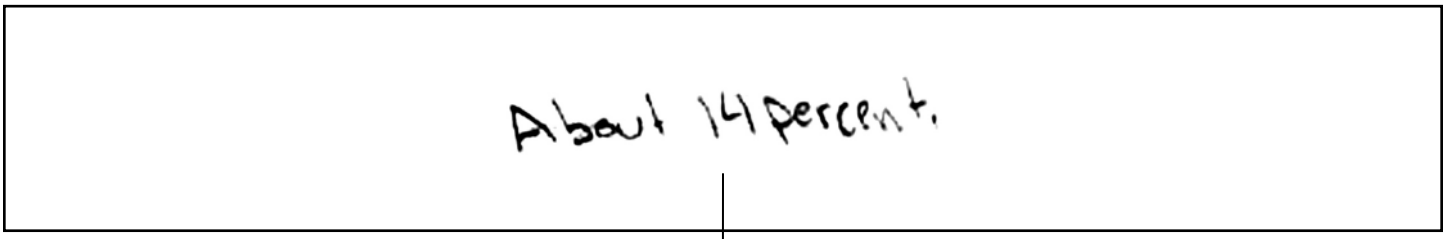
13% is a reasonable approximation. Acceptable answers are 13 ± 1%.

Score Point 1 (Example A)



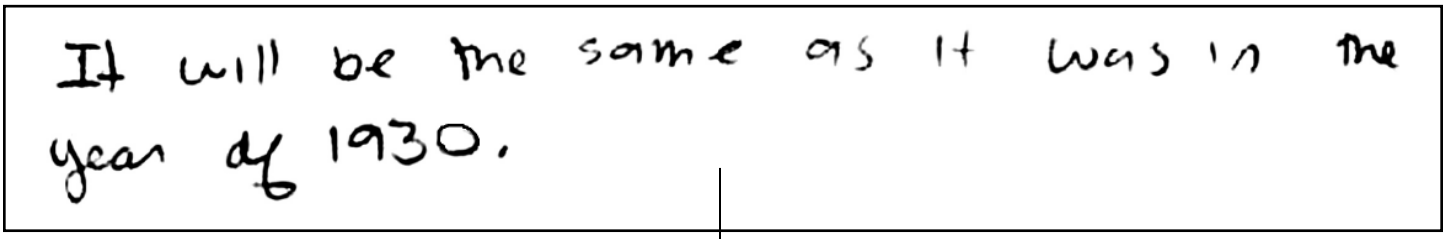
Student's answer is within acceptable range.

Score Point 1 (Example B)



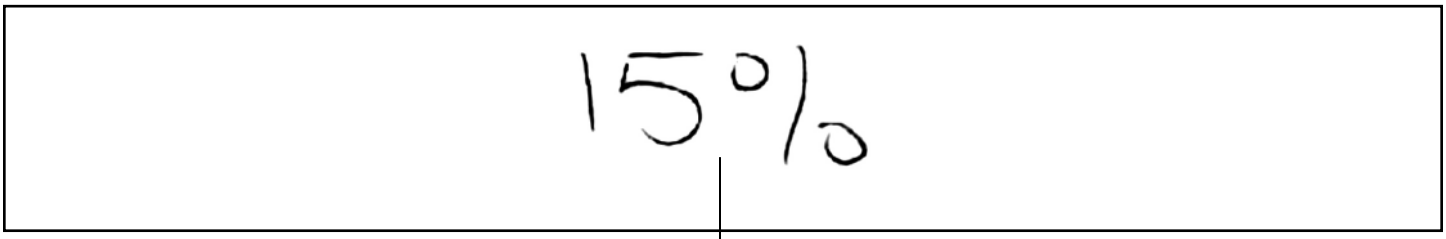
Student's answer is within acceptable range.

Score Point 0 (Example A)



Student's response is outside the acceptable range.

Score Point 0 (Example B)



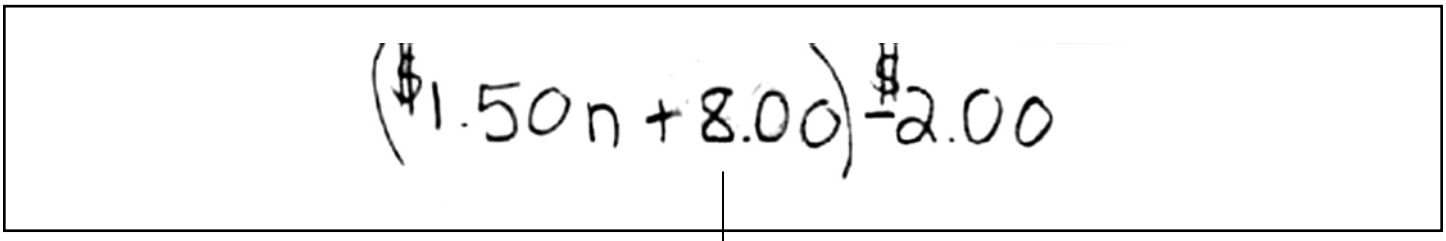
Student's answer is outside the acceptable range.

⓬ Brett bought a fishbowl for \$8.00 and n goldfish for \$1.50 each. He used a coupon for \$2.00 off his purchases. Write an algebraic expression that represents the amount of money Brett paid for his purchases.

Scoring Guide:

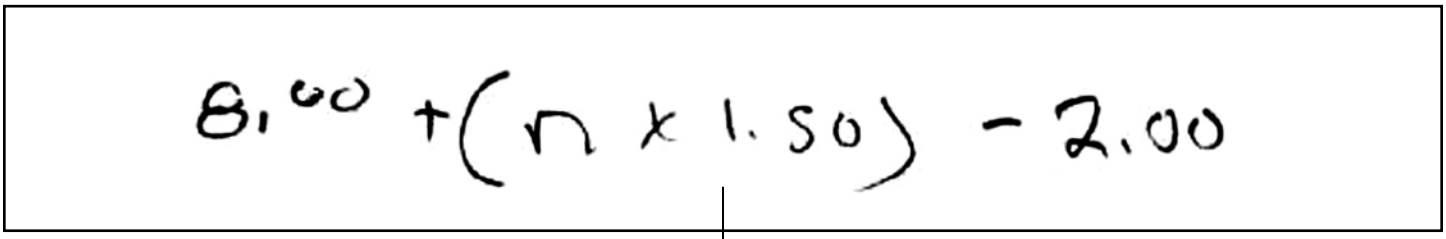
Score	Description
1	Student correctly writes an algebraic expression to describe the situation, $\mathbf{1.5}n \mathbf{+ 8 - 2}$, or $\mathbf{1.5}n \mathbf{+ 6}$, or equivalent.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Score Point 1 (Example A)



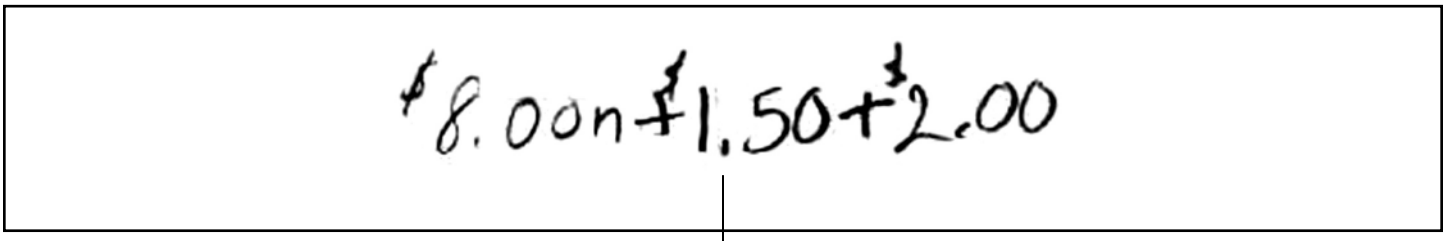
Student's expression is correct.

Score Point 1 (Example B)



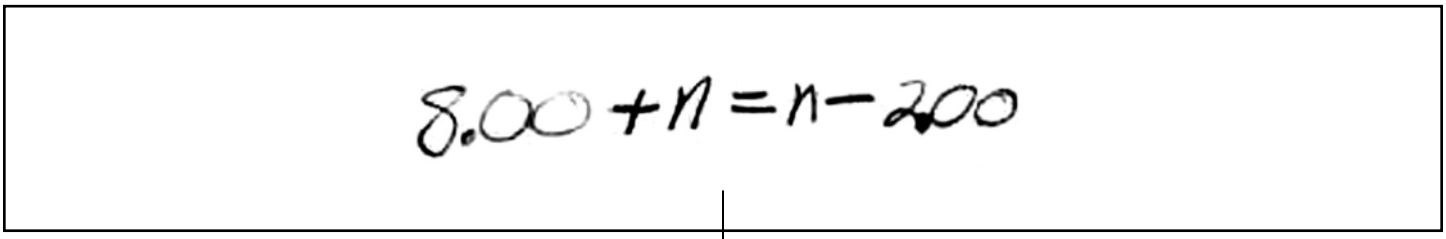
Student's expression is correct.

Score Point 0 (Example A)



Student's expression is incorrect.

Score Point 0 (Example B)



Student's response is incorrect.

13 Look at this pattern.

0, 2, 6, 12, 20, . . .

a. Write the next **two** numbers in the pattern.

b. Use words or symbols to describe the pattern.

Scoring Guide:

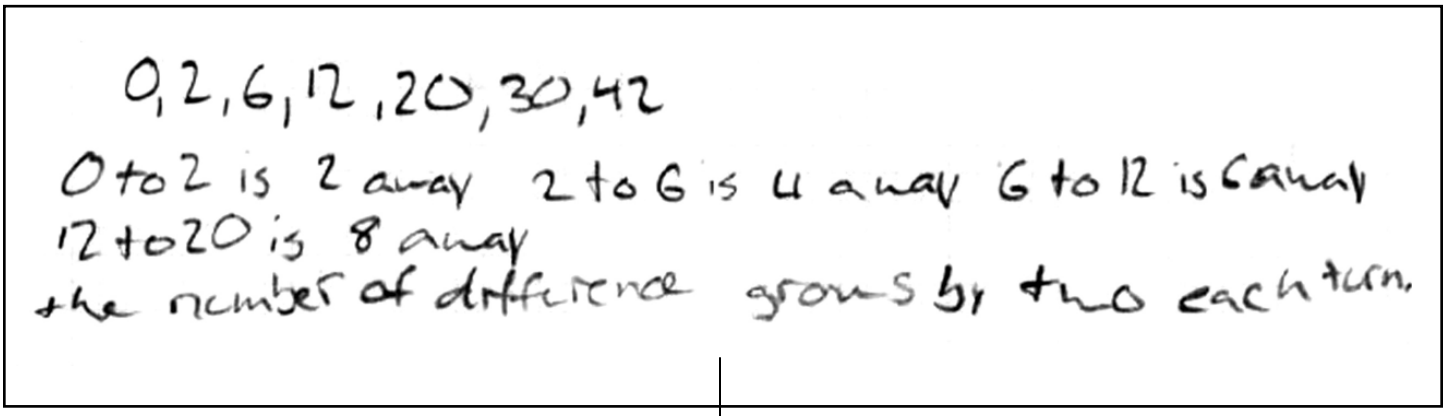
Score	Description
2	Student correctly extends pattern and describes it in words or symbols.
1	Student correctly extends pattern one or two places. OR Student correctly describes pattern.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Sample Responses:

Part a: 30, 42

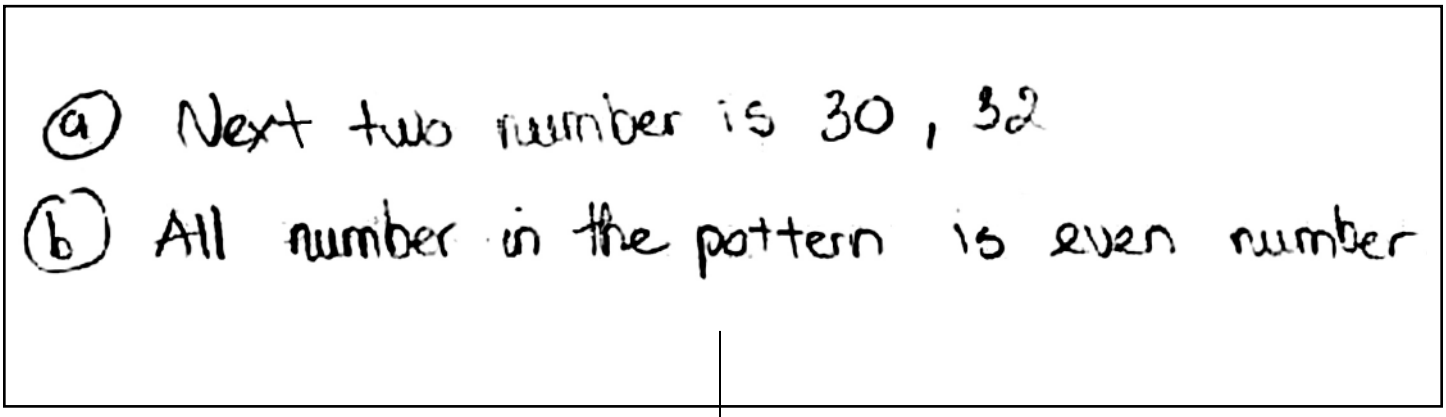
Part b: The numbers in the pattern increase by consecutive even numbers, i.e., +2, +4, +6, +8 . . .
OR
The nth term is $n^2 - n$ or $n(n - 1)$.

Score Point 2 (Example A)



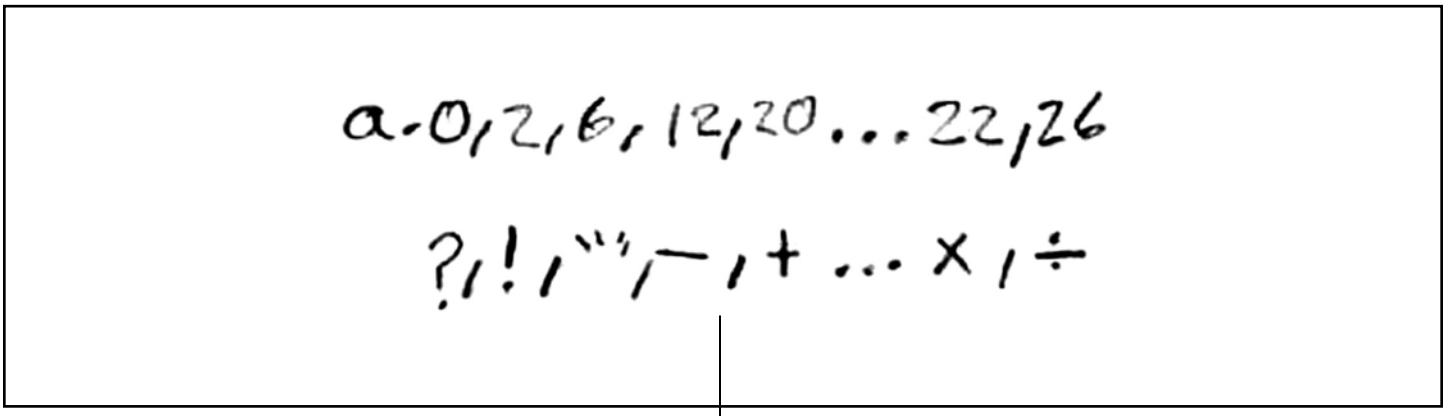
Student correctly extends the pattern and uses words appropriately to describe it. (2 points)

Score Point 1 (Example A)



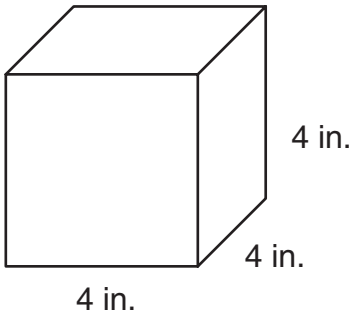
Student correctly extends the pattern one place (1 point) but has an insufficient description of the pattern (0 points).

SCORE POINT 0 (EXAMPLE A)



Student's response is incorrect. (0 points)

14 Each edge of this cube is 4 inches long.



What is the surface area of the cube in square inches? Show your work or explain how you know.

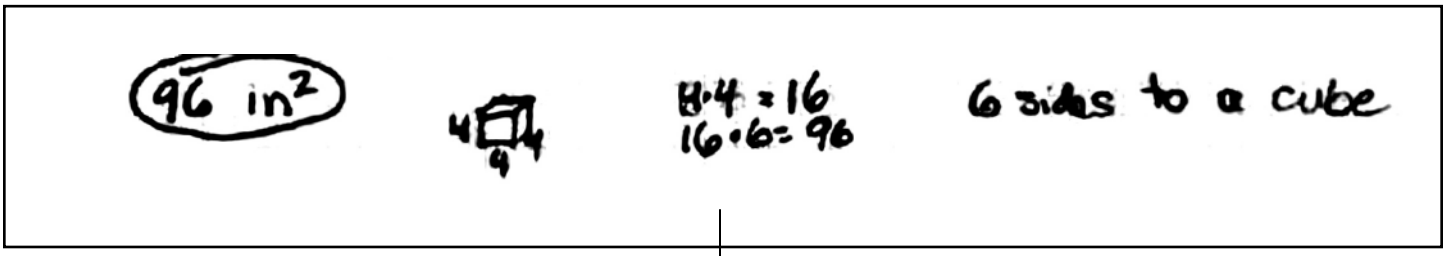
Scoring Guide:

Score	Description
2	Student gives correct answer, **96**, with explanation or work.
1	Student gives correct answer. OR Explanation or work indicates understanding of how to calculate surface area.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Sample Response:

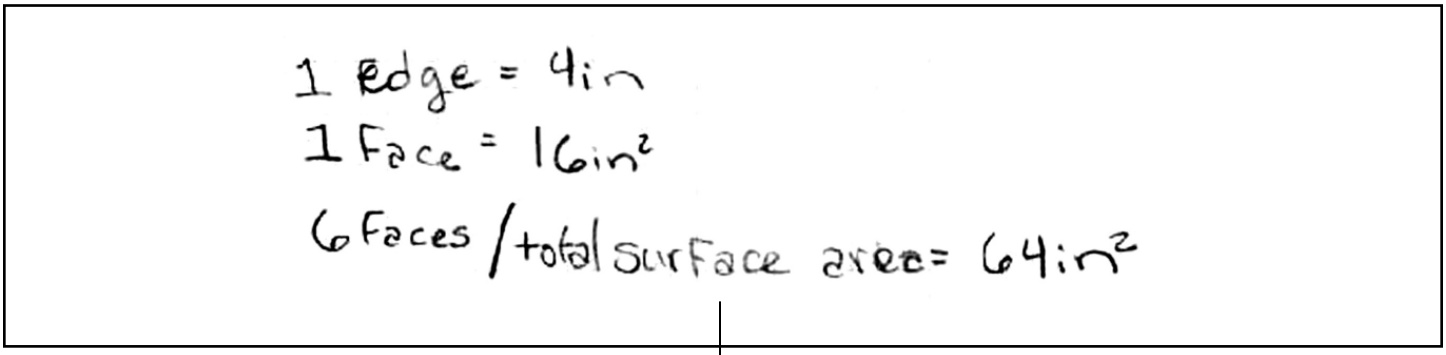
The area of a face of the cube is $4 \times 4 = 16$ sq. in. The cube has 6 faces, so the total surface area of the cube is $6 \times 16 = 96$ sq. in.

SCORE POINT 2 (EXAMPLE A)



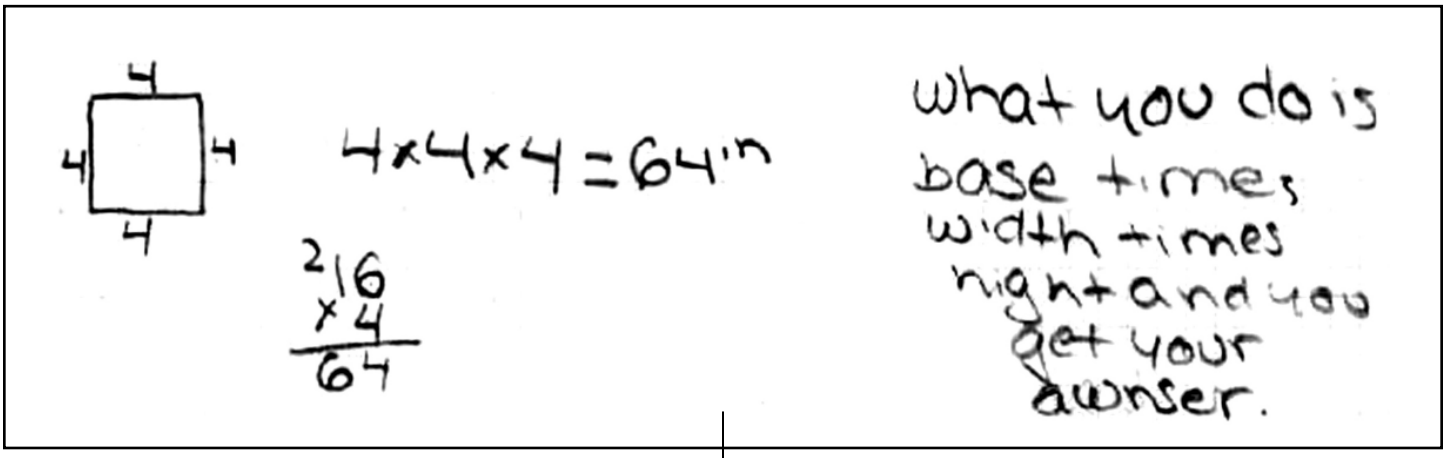
Student shows appropriate work and answer is correct. (2 points)

SCORE POINT 1 (EXAMPLE A)



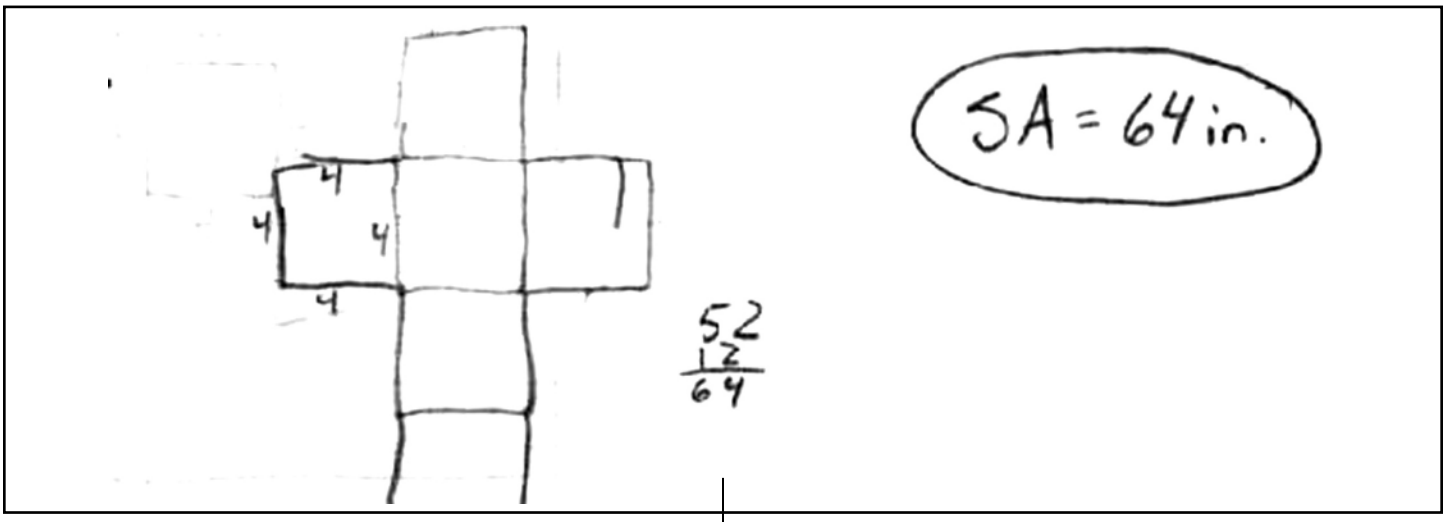
Student's explanation indicates an understanding of surface area—states cube has 6 faces and the area of one face is 16 in^2 (1 point)—but answer is incorrect (0 points).

Score Point 0 (Example A)



Student's response is incorrect—student determines volume rather than surface area. (0 points)

Score Point 0 (Example B)



Student's response is incorrect. (0 points)

15 Three music stores are having CD sales this week. The signs below describe the sales at each store.

The Music Store	The Sound Shop	The Listening Corner
All CDs— Take 30% off the original price!	**All CDs— Take $\frac{1}{4}$ off the original price!**	**All CDs— Pay $\frac{2}{3}$ of the original price!**

Jeremy wants to buy a CD that had the same original price at all three stores.

List the stores in order from the one where the CD is the **least expensive** to the one where it is the **most expensive**. Show your work or explain how you know.

Scoring Guide:

Score	Description
4	Student gives correct answer and strategy.
3	Correct strategy is shown, but student has one error.
2	Correct strategy is shown, but student has two errors.
1	Some correct strategy is shown (e.g., student has correct list of stores).
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	no response

Sample Response:

The Music Store's CDs are 30% or 0.30 off (OR 70% or 0.70 of original price).

The Sound Shop's CDs are $\frac{1}{4}$ or 0.25 off (OR 75% or 0.75 of original price).

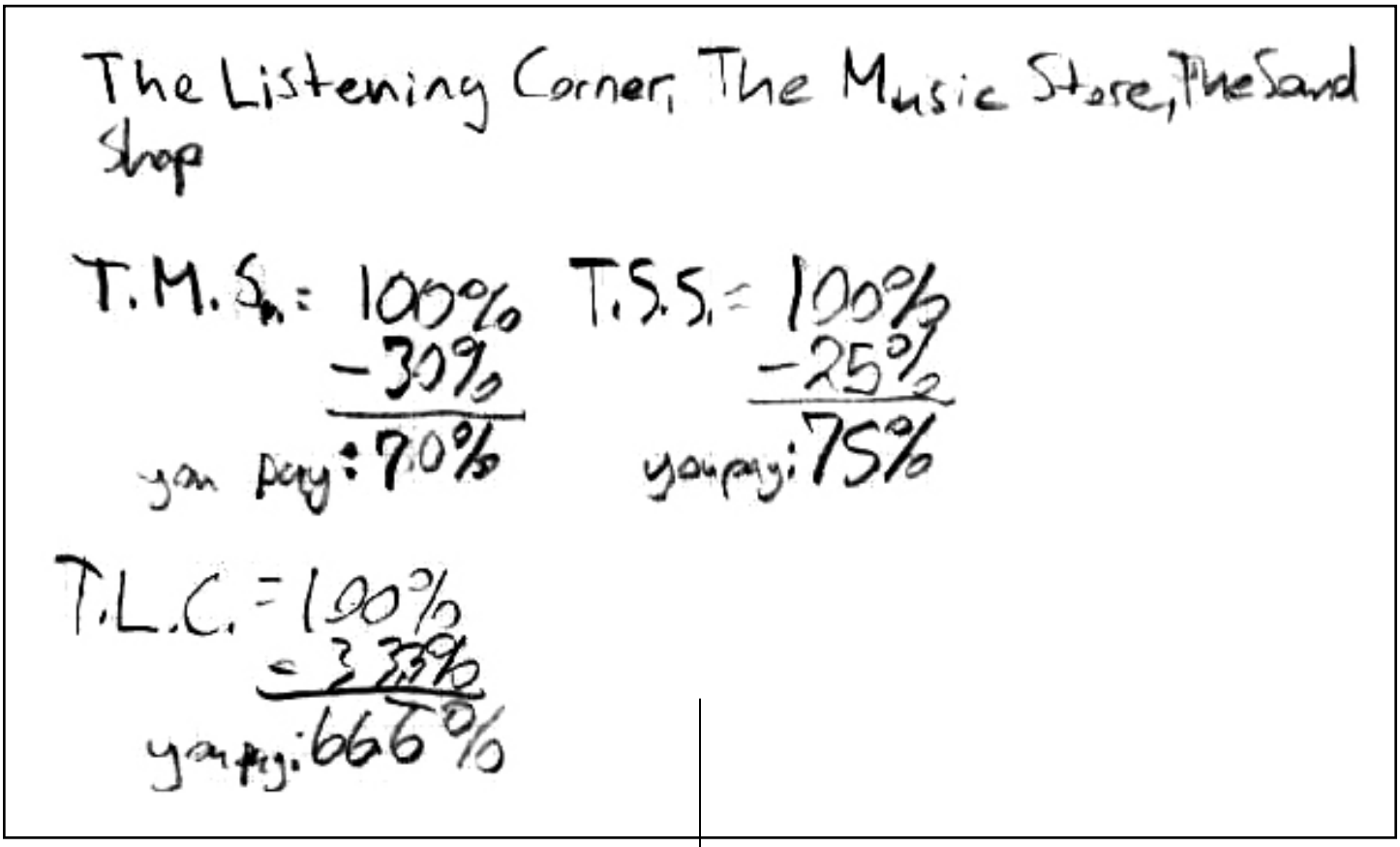
The Listening Corner's CDs are $1 - \frac{2}{3} = \frac{1}{3}$ or 0.3 off (OR about 67% or about 0.67 of original price).

From least expensive to most expensive: The Listening Corner, The Music Store, The Sound Shop.

Notes:

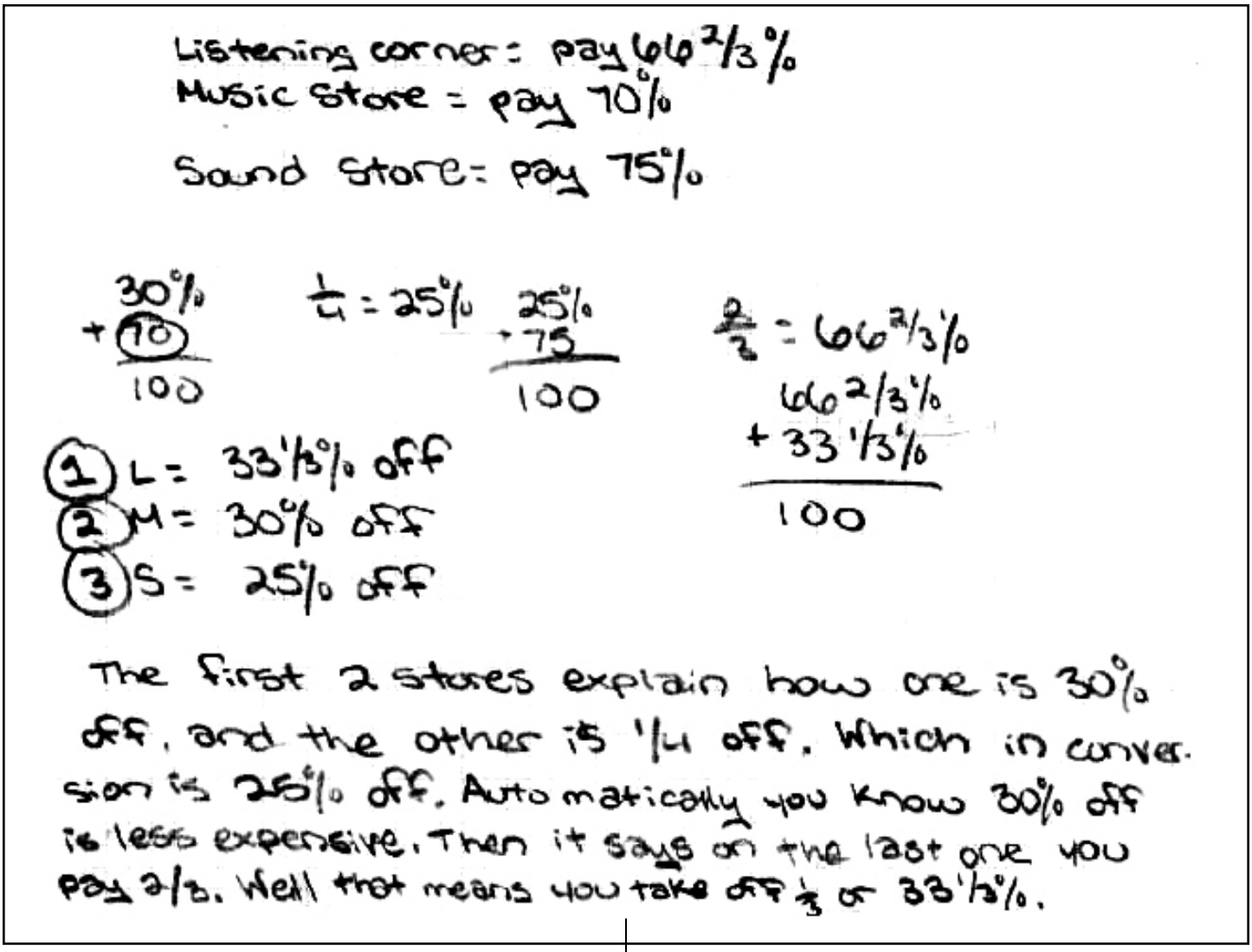
- Do not penalize the student if his/her work clearly shows the correct ordering of prices but does not list the names of the stores.
- Do not penalize the student for approximating $\frac{1}{3}$ with either 33% or 34% OR for approximating $\frac{2}{3}$ with either 66% or 67%.

SCORE POINT 4 (EXAMPLE A)



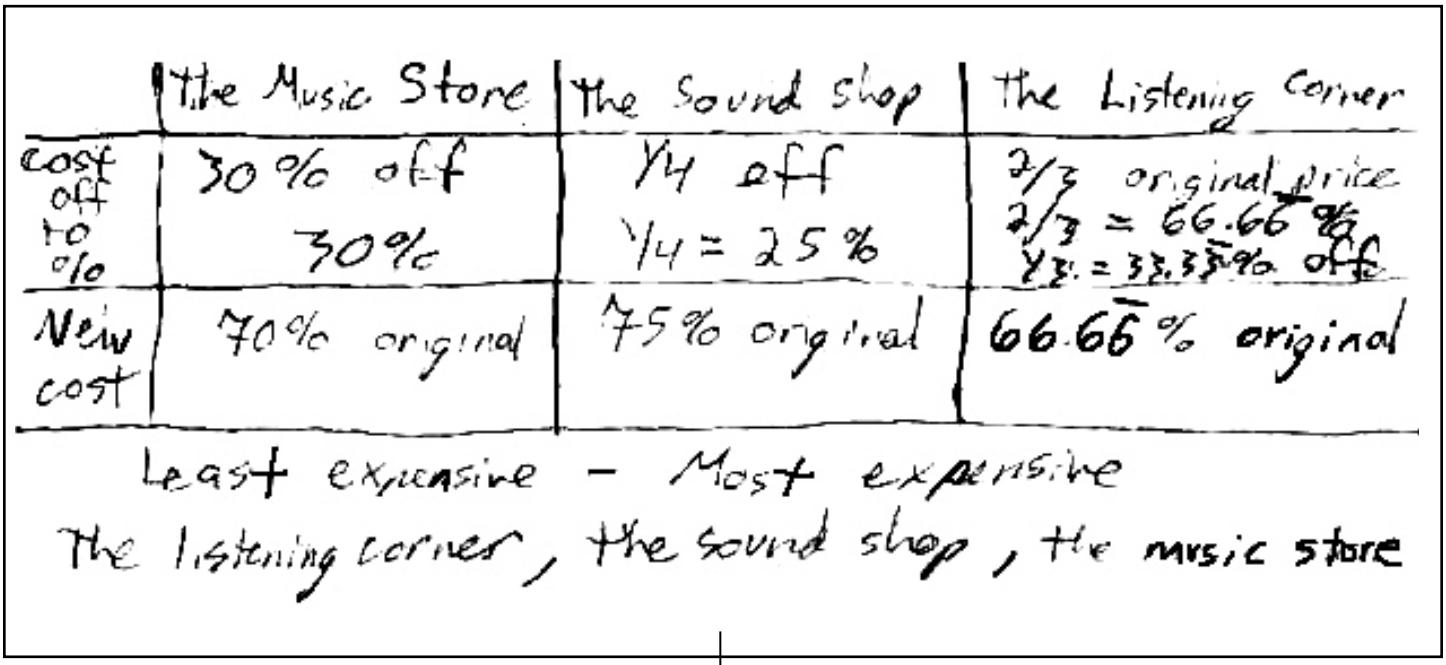
Student's strategy addresses discounts in all three stores and answer is correct. (4 points)

SCORE POINT 4 (EXAMPLE B)



Student's strategy addresses discounts in all three stores and answer is correct. (4 points)

SCORE POINT 3 (EXAMPLE A)



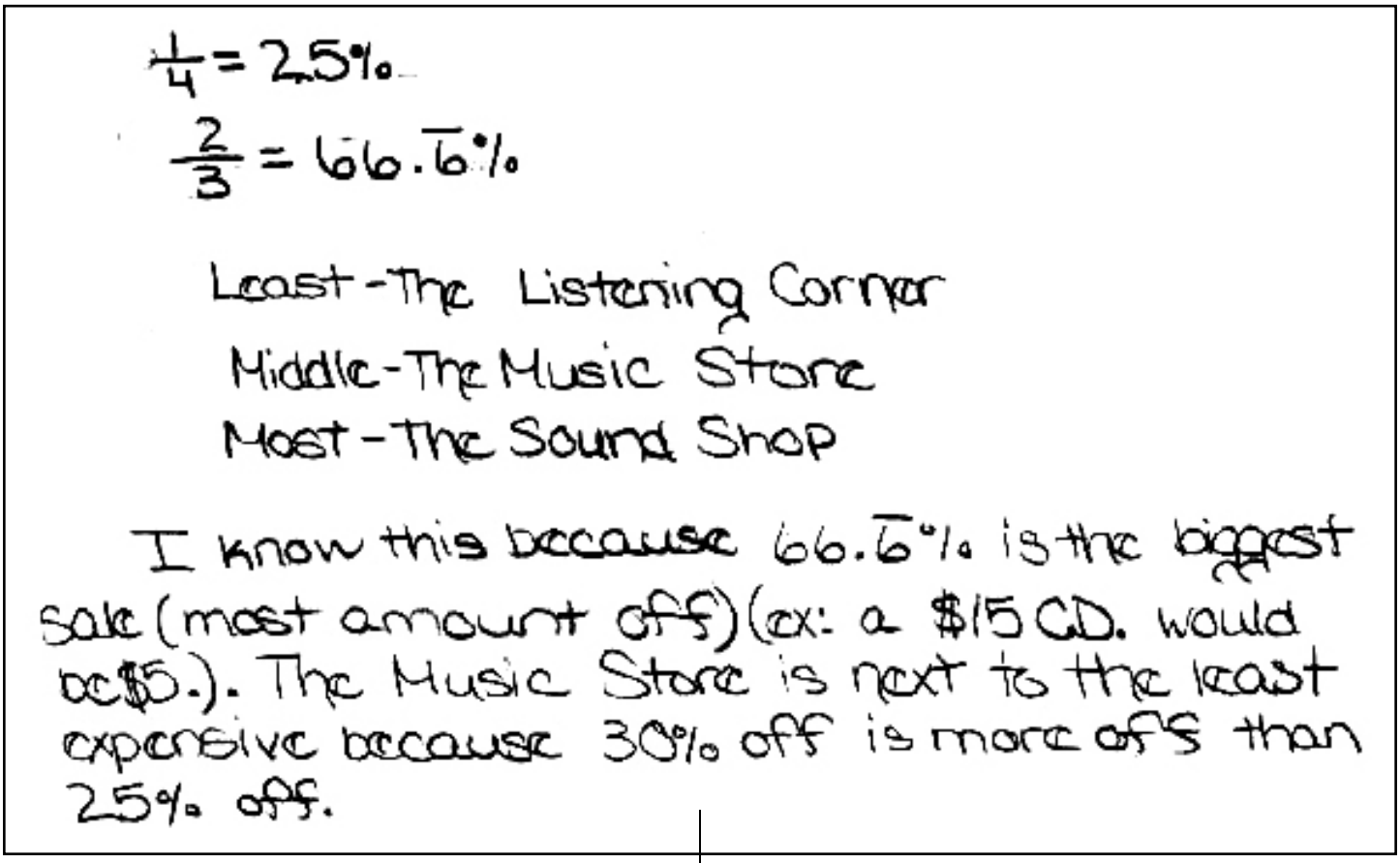
	The Music Store	The Sound Shop	The Listening Corner
cost off to %	30% off 30%	1/4 off 1/4 = 25%	2/3 original price 2/3 = 66.66% 1/3 = 33.33% off
New cost	70% original	75% original	66.66% original

Least expensive - Most expensive

The listening corner, the sound shop, the music store

Student's strategy is correct with one error—The Music Store and The Sound Shop are reversed in the list even though percents are correct in the work. (3 points)

SCORE POINT 3 (EXAMPLE B)



$\frac{1}{4} = 2.5\%$

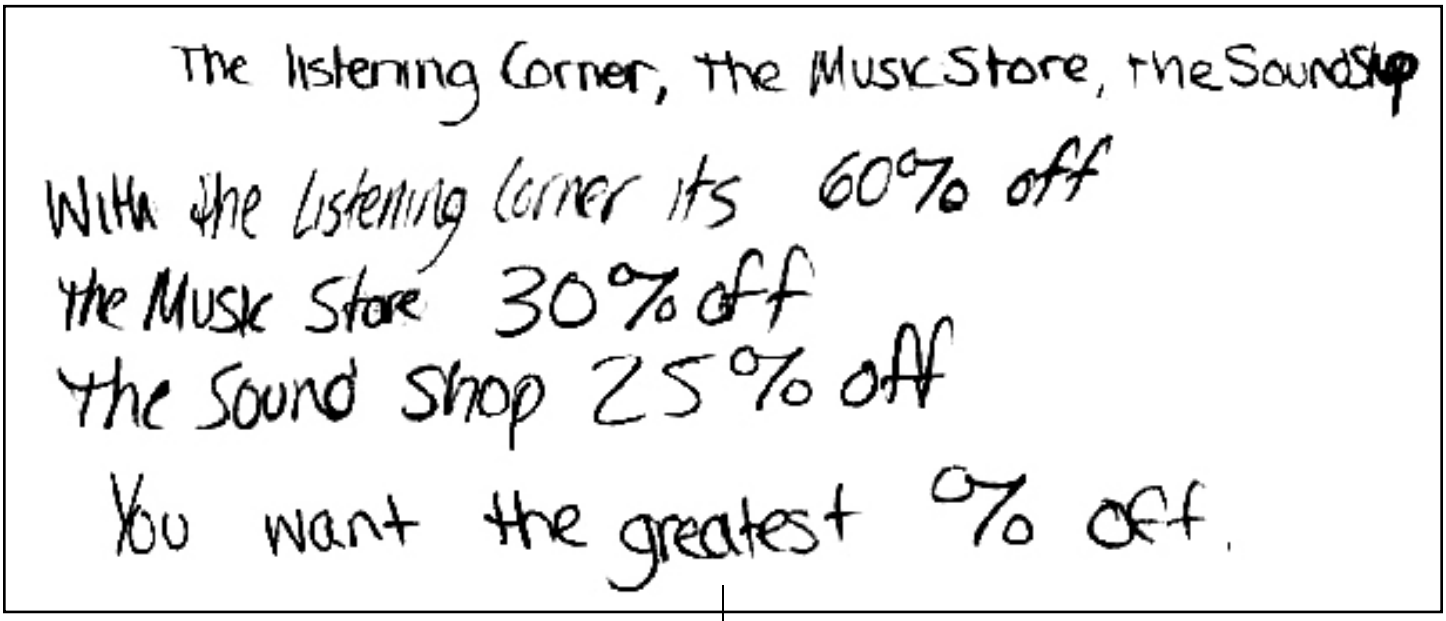
$\frac{2}{3} = 66.\overline{6}\%$

Least - The Listening Corner
Middle - The Music Store
Most - The Sound Shop

I know this because $66.\overline{6}\%$ is the biggest sale (most amount off) (ex: a \$15 CD. would be \$5.). The Music Store is next to the least expensive because 30% off is more off's than 25% off.

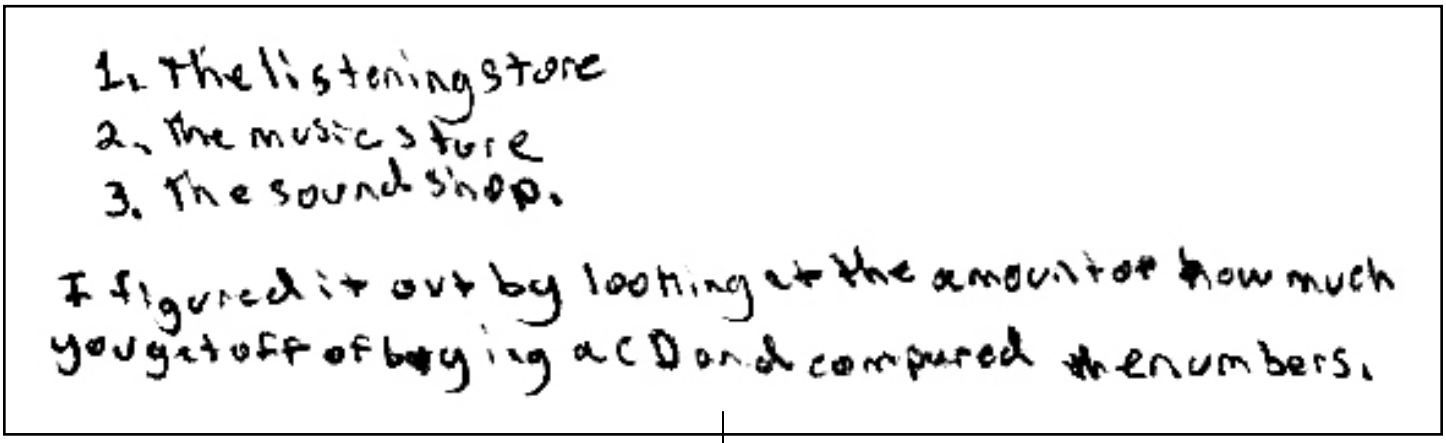
Student's strategy is correct with one error—refers to $66.\overline{6}\%$ as the discount rather than the cost for The Listening Corner. (3 points)

Score Point 2 (Example A)



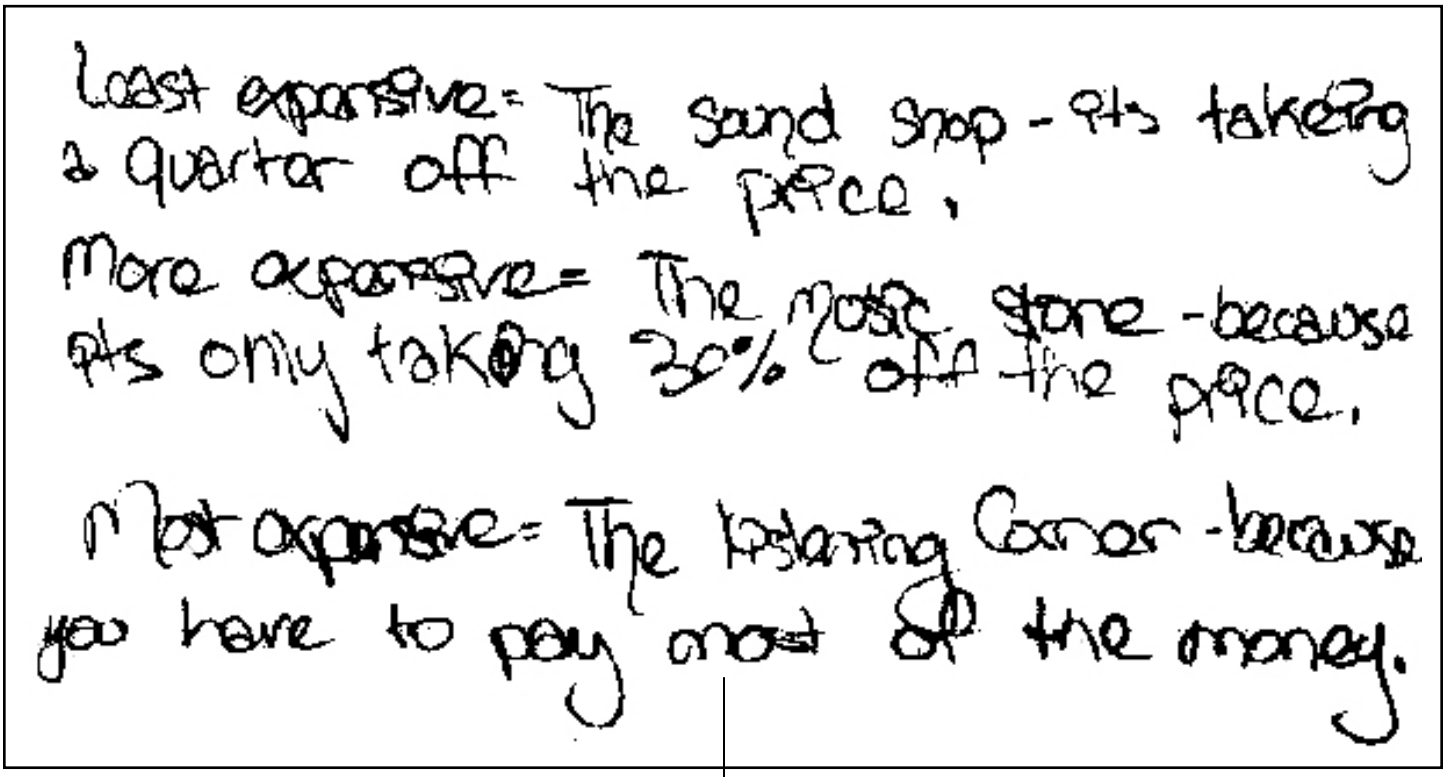
Student's strategy is correct with two errors—miscalculates the percent for $\frac{2}{3}$ and refers to it as the discount rather than the cost for The Listening Corner. (2 points)

Score Point 1 (Example A)



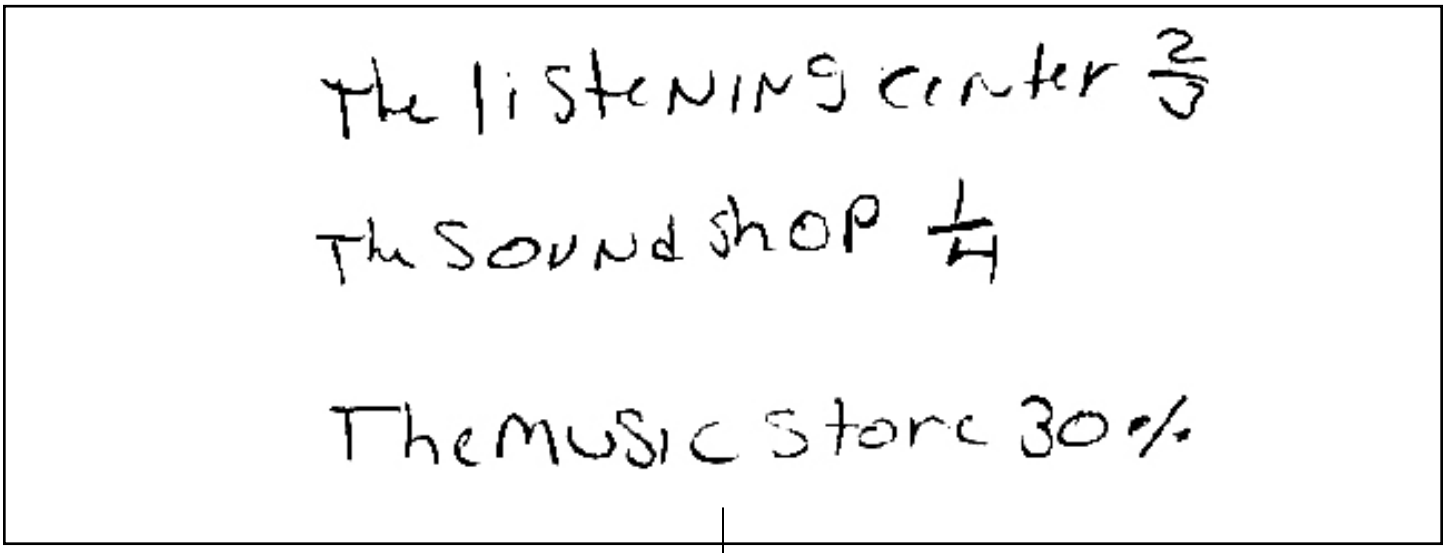
Student's answer is correct, but explanation is vague. (1 point)

SCORE POINT 0 (EXAMPLE A)



Student's response is incorrect. (0 points)

SCORE POINT 0 (EXAMPLE B)



Student's response is incorrect. (0 points)